



WIRING PIPES AND ACCESSORIES



The pipes and accessories are made in compliance with ČSN EN 50 086-1 and ČSN EN 61 386-1, IEC 614, specifications and approved documentation.

The PVC pipes and accessories passed the test of resistance against spread of flame in compliance with EN 61 386-1. In compliance with ČSN 33 2312 can be used in flammability class A to C3 materials. Polyethylene pipes of type LPE 1 and LPE 2 with low and very low mechanical resistance can be used only for installing on/into class A non-flammable materials.

The ČSN 64 0090 standard is applicable for storage.
For information on chemical resistance of used material see catalogue pg. 114.

Flexible pipes	89
very low mechanical resistance (125 N)	
low mechanical resistance (320 N)	
medium mechanical resistance (750 N)	
Wiring flexiblet pipes LPFLEX, MONOFLEX and SUPER MONOFLEX can be installed in areas with danger of explosion of flammable substances in compliance with ČSN EN 60 079-10, dangerous zone 2.	
Flexible metal pipe	93
Drainage pipe KOPODREN	93
Rigid socket pipes	94
low mechanical resistance (320 N)	
medium mechanical resistance (750 N)	
high mechanical resistance (1250 N)	
Wiring rigid socket pipes of type 15xx, 40xx, 80xx, 15xxHF with accessories can be installed in areas with danger of explosion of flammable substances in compliance with ČSN EN 60 079-10, dangerous zone 2.	
Used labeling on the product, e.g.:	
KOPOS TYP4020 IEC325 EN 3341 750N PVC	
<i>manufacturer type ort code material</i>	
The pipes are made in dimension compliance with EN and IEC standards and passed the mechanical resistance test in compliance with: ČSN EN 50 086-1 and 61 386-2-1, IEC 614-1 and IEC 614-2.	
Optical cable protectors - HDPE	97
KOPOFLEX®, KOPODUR® and KOPOHALF®	98
Steel pipes	100
Aluminium pipes	103



All pipes and accessories (except for Weicon) are in compliance with EU directives.



Flexible pipes of types 14.. and 12.. and rigid pipes of types 15.., 40.., 80.., 15.. HF including elbows and couplings are in compliance with German electric standard.

I c o n s - c a p t u r e



material



package dimensions (mm)



temperature resistance, scope of application (°C)



outside diameter (mm)



flammability class of construction material



inside diameter (mm)



mechanical resistance / load limit value (N)



length (mm, m)



classification



dimensions - width, height (mm)



covering grade - IP classification



thread



color



minimum bend radius (mm)



accessories, additional assortment



arc radius - 90°



package (m / kg; pcs. / kg)



dimensions correspond with British Standards



LPFLEX

- very low mechanical resistance

For installation into or under the parget.
 Suitable for mounting into plaster walls and ceilings.
 Suitable for installing in dangerous zone 2 in explosive areas.
 The pipes manufactured in the dimensions according to EN may be connected or attached by means of rigid pipe accessories, see page 95.

	125 N / 5 cm
	EN 61 386-1141 IEC 614-125
	grey-white RAL 9002
	PVC self-snuffing
	A - C3
	-25 - + 60 °C

	mm	mm	m / kg
EN			
2316E	16	10,7	100 / 3,3
2320	20	14,1	100 / 3,8
2325	25	18,3	50 / 3,3
2332	32	24,3	50 / 4,7
2340	40	31,2	25 / 4,1
2350	50	39,6	25 / 4,1
ČSN			
2313	18,7	13,5	100 / 4,2
2316	21,2	16	100 / 4,6
2323	28,5	22,9	100 / 6,2
2329	34,5	28,4	50 / 5,9
2336	42,2	35,9	50 / 6,7
2348	54,5	47,7	50 / 10



MONOFLEX

- low mechanical resistance

For surface installation, into or under parget.
 Suitable for mounting into hollow walls, plaster walls and ceilings.
 Suitable for installing in dangerous zone 2 in explosive areas.
 The pipes manufactured in the dimensions according to EN may be connected or attached by means of rigid pipe accessories, see page 95.

	320 N / 5 cm
	EN 61 386-2241 IEC 614-225
	light grey RAL 7035
	PVC self-snuffing
	A - C3
	-25 - + 60 °C

		mm	mm	m / kg	m / kg
	with wire				with wire
EN					
1416E	1416E D	16	10,7	50 / 2,5	50 / 2,7
1420	1420 D	20	14,1	50 / 3	50 / 3,2
1425	1425 D	25	18,3	50 / 3,5	50 / 3,7
1432	1432 D	32	24,3	50 / 5,3	25 / 3,1
1440		40	31,2	25 / 4,7	
1450		50	39,6	25 / 5,1	
ČSN					
1413/1		18,7	13,5	100 / 6	
1416/1		21,2	16	100 / 6,6	
1423/1		28,5	22,9	100 / 10,8	
1429/1		34,5	28,4	50 / 6,5	
1436/1		42,2	35,9	50 / 9,7	
1448/1		54,5	47,7	50 / 11,5	



SUPER MONOFLEX

- medium mechanical resistance

For surface installation, into or under parget.
 Suitable for mounting into hollow walls, plaster walls, ceilings and into concrete.
 Suitable for installing in dangerous zone 2 in explosive areas.
 The pipes manufactured may be connected or attached by means of rigid pipe accessories, see page 95.



	750 N / 5 cm
	EN 61 386-3341 IEC 614-325
	dark grey RAL 7012
	PVC self-snuffing
	A - C3
	-25 - + 60 °C

	mm	mm	m / kg
EN			
1216E	16	10,7	50 / 3,2
1220	20	14,1	50 / 3,5
1225	25	18,3	50 / 5,4
1232	32	24,3	25 / 4,1
1240	40	31,2	25 / 5
1250	50	39,6	25 / 7



MONOFLEX HF - low mechanical resistance

NEW



	320 N / 5 cm
	black RAL 9005
	PP halogen-free self-snuffing
	A - C3
	-5 - +105 °C

	mm	mm	m / kg
EN			
1416EHF	16	10,7	50 / 3,7
1420HF	20	14,1	50 / 3,7
1425HF	25	18,2	50 / 4,7
1432HF	32	24,2	50 / 5,5

Flexible halogen-free self-extinguishing pipe made from PP. It may be used in premises where human resources and valuable property protection, damage minimization in case of fire are nsisted on, further on it may be used for machinery, public buildings and railways. The pipes manufactured may be connected or attached by means of rigid pipe accessories, see page 95.



SUPER MONOFLEX HFPP - medium mechanical resistance

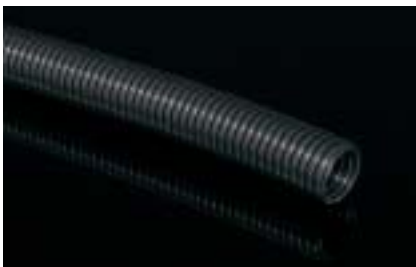
NEW



	750 N / 5 cm
	grey RAL 7037
	PP halogen-free self-snuffing
	A - C3
	-5 - +90 °C

	mm	mm	m / kg
EN			
1216EHFPP	16	10,7	100 / 5,1
1220HFPP	20	14,1	100 / 6
1225HFPP	25	18,2	100 / 14
1232HFPP	32	24,2	50 / 5,2
1240HFPP	40	32,4	50 / 10
1250HFPP	50	41,2	25 / 7

Flexible halogen-free self-extinguishing pipe made from PP. It may be used in premises where human resources and valuable property protection, damage minimization in case of fire are nsisted on, further on it may be used for machinery, public buildings and railways. The pipes manufactured may be connected or attached by means of rigid pipe accessories, see page 95.



- flexible pipe for a mechanic protection of cables

	350 N / 5 cm
	black RAL 9005
	PA 6 halogen-free self-snuffing
	A - C3
	stable mounting -40 - + 120 °C flexible mounting -5 - +120 °C
	pg. 91

	mm	mm	m / kg
APAFS16	15,8	11,8	50 / 2
APAFS21	21,2	16,5	50 / 3,2
APAFS28	28,5	22,6	50 / 5,8
APAFS34	34,5	28,8	50 / 8,4
APACS42	42,5	35,2	25 / 5,2
APACS54	54,5	46,5	25 / 6,1
APACS80	79,3	67,3	10 / 3,6

Flexible UV stable halogenless self-extinguishing pipe made from PA 6. It may be used in premises where human resources and valuable property protection, damage minimization in case of fire, further on it may be used for machinery, public buildings and railways.

Accessories for wiring flexible pipes





Adaptalok is a system of utilities allowing to terminate and fix the pipe. Utilities allow 45° and 90° tapping and direct threaded termination - M16 - M50 or PG13,5 - PG48. The pipe termination is available as for flange as well. Installation and removal is easy and quick. Utilities are equipped with removal part allowing to remove the termination easily and without breaking. Adaptalok is tested in compliance with EN 50086.






Suitable for installing in dangerous zone 2 in explosive areas.




There are 10 pcs. of terminations in the pack, however you can have it separately as well. The matrix is provided for metric dimensions as well.

Used material resists to UV radiation, mineral oils, alcohols, petrol and acids.

Combination of utilities is driven by outside diameter of used pipe.

	750 N / 5 cm
	IP66
	PA 6 halogen-free self-snuffing
	-40 - + 105 °C 120 °C for a short term

						
pipe mm		Adaptalok direct	Adaptalok 90°	Adaptalok 45°	Adaptalok washer	Adaptalok nut
M						
16	M16x1,5	AM16/16	AM16/16-90	AM16/16-45	A-SW/M16	For metrical dimension the nut is part of the package.
20	M20x1,5	AM20/20				
21	M20x1,5	AM21/20	AM21/20-90	AM21/20-45	A-SW/M20	
25	M25x1,5	AM25/25				
28	M25x1,5	AM28/25	AM28/25-90	AM28/25-45	A-SW/M25	
34	M32x1,5	AM34/32	AM34/32-90	AM34/32-45	A-SW/M32	
42	M40x1,5	AM42/40	AM42/40-90	AM42/40-45	A-SW/M40	
54	M50x1,5	AM54/50	AM54/50-90	AM54/50-45	A-SW/M50	
PG						
16	PG13,5	APG16/13	APG16/13-90	APG16/13-45	A-SW/PG13	A-LN/PG13
21	PG16	APG21/16	APG21/16-90	APG21/16-45	A-SW/PG16	A-LN/PG16
28	PG21	APG28/21	APG28/21-90	APG28/21-45	A-SW/PG21	A-LN/PG21
34	PG29	APG34/29	APG34/29-90	APG34/29-45	A-SW/PG29	A-LN/PG29
42	PG36	APG42/36	APG42/36-90	APG42/36-45	A-SW/PG36	A-LN/PG36
54	PG48	APG54/48	APG54/48-90	APG54/48-45	A-SW/PG48	A-LN/PG48

						
pipe mm		Adaptalok direct flange	Adaptalok 90° flange	Adaptalok 45° flange	Adaptalok termination	Dismounting part
16		A16FL	A16FL-90	A16FL-45	A-ES16	A16RT
20					A-ES20	
21		A21FL	A21FL-90	A21FL-45		A21RT
28		A28FL	A28FL-90	A28FL-45	A-ES28	A28RT
32					A-ES32	
34						A34RT
40					A-ES40	
42						A42RT
54						A54RT
13 - 34						ARTSET



LPE-1 - low mechanical resistance

Suitable for direct monolithic concreting or under the parget.
 Tubes with the dimension ČSN 16, 29 are standardly delivered with color strips for easy identification of individual wiring circuits. It is also possible to deliver tubes of this dimension without the distinctive strips. Tubes with the dimension EN 16, 20 and 25 can be delivered with color strips
 Dimension EN and ČSN 16, 29 are available with pull-out wire as well.

	320 N / 5 cm
	EN 61 386-2242 IEC 614-295
	ČSN - white EN - orange
	PE not self-snuffing
	A
	-25 - + 90 °C

	mm	mm	m / kg
EN			
2316E/LPE-1	16	10,7	100 / 5,2
2320/LPE-1	20	14,1	100 / 6,5
2325/LPE-1	25	18,3	100 / 9,1
2332/LPE-1	32	24,3	50 / 4,8
2340/LPE-1	40	31	25 / 3,4
ČSN			
2316/LPE-1	21,2	16	100 / 6,6
2323/LPE-1	28,5	22,9	100 / 10,3
2329/LPE-1	34,5	28,4	50 / 6,5



LPE-2 - very low mechanical resistance

Suitable for installing into prefabricated concrete elements.
 Tubes with the dimension ČSN 13, 16, 29 are standardly delivered with color strips for easy identification of individual wiring circuits. It is also possible to deliver tubes of this dimension without the distinctive strips. Tubes with the dimension EN 16, 20 and 25 can be delivered with color strips
 Dimension EN and ČSN 13, 16, 29 are available with pull-out wire as well.

	125 N / 5 cm
	EN 61 386-1142 IEC 614-195
	ČSN - white EN - orange
	PE not self-snuffing
	A
	-25 - + 90 °C

	mm	mm	m / kg
EN			
2316E/LPE-2	16	10,7	100 / 3,6
2320/LPE-2	20	14,1	100 / 5,0
2325/LPE-2	25	18,3	100 / 7,8
2332/LPE-2	32	24,3	50 / 3,3
2340/LPE-2	40	31	25 / 3,0
ČSN			
2313/LPE-2	18,7	13,5	100 / 4,2
2316/LPE-2	21,2	16	100 / 4,8
2323/LPE-2	28,5	22,9	100 / 6,8
2329/LPE-2	34,5	28,4	50 / 4,8
2336/LPE-2	42,2	35,9	50 / 5,7



SPIROFLEX - low mechanical resistance

Flexible protective pipe reinforced with hard PVC spiral.
 Excels in smooth inside surface and very good strength, while the flexibility is guaranteed.

	320 N / 5 cm
	EN 61 386-2311
	light grey RAL 7035
	PVC self-snuffing fireproof
	A - C3
	+5 - + 60 °C

	mm	mm	m / kg
SF16	20,7	16	30 / 3,5
SF20	24,7	20	30 / 4,4
SF25	30,6	25	30 / 5,6
SF32	38,0	32	30 / 7,3



Conduit bushing SPIROFLEX

	IP67
	light grey RAL 7035
	PVC self-snuffing fireproof
	A - C3
	+5 - + 60 °C

	pipe mm	pcs. / kg
SFM20	M20x1,5	16 / 0,14
SFM25	M25x1,5	20 / 0,18
SFM32	M32x1,5	25 / 0,23
SFM40	M40x1,5	32 / 0,27



Flexible metal pipe

	750 N / 5 cm
	IEC 614-3352
	steel
	-45 - + 90 °C
	pg. 93, 100

	mm	mm	m / kg
3313	18,9	13,5	100 / 18,7
3316	21,4	16	100 / 23,2
3323	28,9	23	50 / 16,4
3329	35,2	29	50 / 22,3
3336	43	36	25 / 14,8
3348	54,9	48	25 / 18,3

The pipes are suitable for mechanical protection of conductors and cables inside halls (indoor).

The pipes are made of galvanized steel bar at the top (zinc layer 3 - 4 µm) and isolation layer inside.

Flexible metal pipes may be connected to steel threaded pipes by means of couplings of 98xx series (page 100).

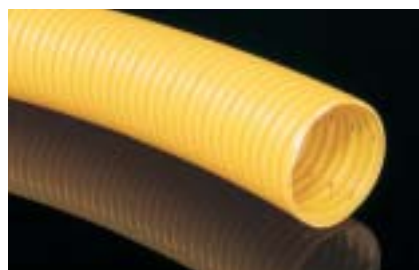


Couplers for flexible metal pipes

	Al-alloy
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	mm	mm	pcs. / kg
9613	24 x 35	19,3	20 / 0,25
9616	26,5 x 40	21,7	20 / 0,35
9629	41 x 50	35,7	20 / 0,75
9636	49 x 55	43,5	10 / 0,78
9648	61 x 60	55,3	10 / 0,85

The couplers are designed to join flexible metal pipes using inner clipping nick. 9636 and 9648 available before sellout.



KOPODREN - drainage pipe

	50 m
	yellow
	PVC

	mm	mm	m / kg
KOPODREN 50	50	44	50 / 7
KOPODREN 65	65	58	50 / 10
KOPODREN 80	80	71,5	50 / 15,5
KOPODREN 100	100	91	50 / 21
KOPODREN 125	125,5	115	50 / 30,5
KOPODREN 160	159,5	144	50 / 49
KOPODREN 200	199,5	182	45 / 55,8

KOPODREN pipeline is used in all areas of drain technics, e.g. draining of buildings, deep engineering constructions, sport places building, in agriculture, gardens, to drain areas of use, or to temporary draining of work sites.

The pipes have low weight and high chemical resistance.

The construction of the pipe ensures high flexibility. This is a major advantage when installing as well as meeting the requirement of small bend radius.

The pipe joints are protected against pull-off and are designed to join using a snap.

KOPODREN drainage pipe accessories

 pipe mm	reducer	coupling	branch pipe 45°	bend 90°	elbow 90°	T-piece	plug	terminal flap
50	KN-R 65/50	KN-S 50	KN-OD45 50	KN-OB90 50		KN-T 50	KN-Z 50	KN-KK 50
65	KN-R 80/65	KN-S 65	KN-OD45 65	KN-OB90 65		KN-T 65	KN-Z 65	KN-KK 65
80	KN-R 100/80	KN-S 80	KN-OD45 80	KN-OB90 80	KN-K90 80	KN-T 80	KN-Z 80	KN-KK 80
100	KN-R 125/100	KN-S 100	KN-OD45 100	KN-OB90 100	KN-K90 100	KN-T 100	KN-Z 100	KN-KK 100
125,5	KN-R 160/125	KN-S 125	KN-OD45 125		KN-K90 125	KN-T 125	KN-Z 125	KN-KK 125
159,5	KN-R 200/160	KN-S 160	KN-OD45 160		KN-K90 160	KN-T 160	KN-Z 160	KN-KK 160
199,5		KN-S 200	KN-OD45 200		KN-K90 200	KN-T 200	KN-Z 200	KN-KK 200



Rigid socket pipes are fireproof-tested.
Available in the length of 2 m as well.
Suitable for installing in dangerous zone 2 in explosive areas.

Low mechanical resistance



	320 N / 5 cm
	EN 61 386-2241 IEC 614-225
	light grey RAL 7035 white RAL 9010
	3 m
	PVC self-snuffing fireproof
	A - C3
	-25 - + 60 °C
	pg. 95

	light grey	white	mm	mm	m / kg
EN					
1516E KA	1516E HA		16	13,7	30 / 2,5
1520 KA	1520 HA		20	17,4	30 / 3,3
1525 KA	1525 HA		25	22,1	30 / 4,2
1532 KA	1532 HA		32	28,6	30 / 6,2
1540 KA	1540 HA		40	35,8	30 / 7,3
1550 KA	1550 HA		50	45,1	30 / 11,1
1563 KA	1563 HA		63	57	15 / 8



Rigid socket pipes are fireproof-tested.
Available in the length of 2 m as well.
Suitable for installing in dangerous zone 2 in explosive areas.

Medium mechanical resistance



	750 N / 5 cm
	EN 61 386-3341 IEC 614-325
	dark grey RAL 7012
	3 m
	PVC self-snuffing fireproof
	A - C3
	-25 - + 60 °C
	pg. 95

	mm	mm	m / kg
EN			
4016E LA	16	13	30 / 3,3
4020 LA	20	16,9	30 / 3,8
4025 LA	25	21,4	30 / 5,4
4032 LA	32	27,8	30 / 7,1
4040 LA	40	35,4	30 / 9,6
4050 LA	50	44,3	30 / 11
4063 LA	63	57	15 / 9,7



Rigid socket pipes are fireproof-tested.
Available in the length of 2 m as well.
Suitable for installing in dangerous zone 2 in explosive areas.

High mechanical resistance



	1250 N / 5 cm
	EN 61 386-4441 IEC 614-425
	black RAL 9005
	3 m
	PVC self-snuffing fireproof
	A - C3
	-25 - + 60 °C
	pg. 95

	mm	mm	m / kg
EN			
8016E FA	16	12,2	30 / 4,1
8020 FA	20	15,8	30 / 4,8
8025 FA	25	20,6	30 / 6,5
8032 FA	32	26,6	30 / 8,9
8040 FA	40	34,4	30 / 9
8050 FA	50	43,2	30 / 15,6
8063 FA	63	57	15 / 11,2






Elbow - precise elbows manufactured using injection have throat on both sides are designed for 90° bend. Bend radius allows to for continual transition and to easily fix the conductors and cables.

Couplings - designed for smooth transition in pipe distribution system. Throated pipes decrease usage for realization of distribution system from fixed pipes.






Clips - isolation PVC clamps are designed for fixation of the pipe distribution system onto underlying material. Push the pipe between the clamp jaws to mount the pipe. The clamps are equipped with elements for placing next to each other to create continual row of pipes as well as with grooves for installation in supporting trunkings of 5820/.. series (see page 77).

Possible ot mount in areas of danger zone 2 - explosive environment.

Labeling allows to distinguish particular colors and package KA, HA, LA, FA.

	_A 3 m _B 10 pcs. _C 2 m
	K_ light grey RAL 7035 H_ white RAL 9010 L_ dark grey RAL 7012 F_ black RAL 9005
	PVC self-snuffing
	A - C3
	-25 - + 60 °C



pipe		elbows			couplings			clamps	
									
mm			pcs. / kg	mm		pcs. / kg		pcs. / kg	
16	1516E KA	4116 KB	10; 480 / 5,3	55	0216E KB	10; 1320 / 8,8	5316E KB	10; 2500 / 14,7	
	1516E HA	4116 HB	10; 480 / 5,3		0216E HB	10; 1320 / 8,8	5316E HB	10; 2500 / 14,7	
	4016E LA	4116 LB	10; 480 / 5,3		0216E LB	10; 1320 / 8,8	5316E LB	10; 2500 / 14,7	
	8016E FA	4116 FB	10; 480 / 5,3		0216E FB	10; 1320 / 8,8	5316E FB	10; 2500 / 14,7	
20	1520 KA	4120 KB	10; 270 / 5,6	70	0220 KB	10; 840 / 8,0	5320 KB	10; 1900 / 13,5	
	1520 HA	4120 HB	10; 270 / 5,6		0220 HB	10; 840 / 8,0	5320 HB	10; 1800 / 12,7	
	4020 LA	4120 LB	10; 270 / 5,6		0220 LB	10; 840 / 8,0	5320 LB	10; 1800 / 12,7	
	8020 FA	4120 FB	10; 270 / 5,6		0220 FB	10; 840 / 8,0	5320 FB	10; 1800 / 12,7	
25	1525 KA	4125 KB	10; 140 / 4,9	85	0225 KB	10; 480 / 7,5	5325 KB	10; 1280 / 12,6	
	1525 HA	4125 HB	10; 140 / 4,9		0225 HB	10; 480 / 7,5	5325 HB	10; 1280 / 12,6	
	4025 LA	4125 LB	10; 140 / 4,9		0225 LB	10; 480 / 7,5	5325 LB	10; 1280 / 12,6	
	8025 FA	4125 FB	10; 140 / 4,9		0225 FB	10; 480 / 7,5	5325 FB	10; 1280 / 12,6	
32	1532 KA	4132 KB	10; 60 / 4,6	110	0232 KB	10; 260 / 6,5	5332 KB	10; 840 / 11,3	
	1532 HA	4132 HB	10; 60 / 4,6		0232 HB	10; 260 / 6,5	5332 HB	10; 840 / 11,3	
	4032 LA	4132 LB	10; 60 / 4,6		0232 LB	10; 260 / 6,5	5332 LB	10; 840 / 11,3	
	8032 FA	4132 FB	10; 60 / 4,6		0232 FB	10; 260 / 6,5	5332 FB	10; 840 / 11,3	
40	1540 KA	4140 KB	5; 35 / 3,8	135	0240 KB	10; 120 / 4,6	5340 KB	10; 520 / 8,8	
	1540 HA	4140 HB	5; 35 / 3,8		0240 HB	10; 120 / 4,6	5340 HB	10; 520 / 8,8	
	4040 LA	4140 LB	5; 35 / 3,8		0240 LB	10; 120 / 4,6	5340 LB	10; 520 / 8,8	
	8040 FA	4140 FB	5; 35 / 3,8		0240 FB	10; 120 / 4,6	5340 FB	10; 520 / 8,8	
50	1550 KA	4150 KB	10; 40 / 6,1	170	0250 KB	10; 210 / 10,5	5350 KB	10; 100 / 2	
	1550 HA				0250 HB	10; 210 / 10,5	5350 HB	10; 100 / 2	
	4050 LA				0250 LB	10; 210 / 10,5	5350 LB	10; 100 / 2	
	8050 FA				0250 FB	10; 210 / 10,5	5350 FB	10; 100 / 2	
63	1563 KA			170	0263 KB	2; 50 / 4,4	5363 KB		
	1563 HA				0263 HB	2; 50 / 4,4	5363 HB		
	4063 LA				0263 LB	2; 50 / 4,4	5363 LB		
	8063 FA				0263 FB	2; 50 / 4,4	5363 FB		



Halogen-free rigid socket pipe suitable for housing and industrial distribution in hospitals, schools, IT centers, etc. Suitable for environments with increased need of people and equipment protection.
 Tested with flaming loop 960 °C.
 The black pipes (FA) are UV-stabilized.
 The pipes are equipped with throat.
 Suitable for installing in dangerous zone 2 in explosive areas.

Halogen-free pipes



	320 N / 5 cm 750 N / 5 cm 1250 N / 5 cm
	black RAL 9005 light grey RAL 7035
	3 m
	PPO halogen-free self-snuffing fireproof
	A - C3
	-45 - + 90 °C

		black	light grey	mm	m / kg
EN					
low mechanical resistance (320 N)					
1516EHF FA	1516EHF KA	16	13,7	30 / 2,1	
1520HF FA	1520HF KA	20	17,4	30 / 2,5	
1525HF FA	1525HF KA	25	22,1	30 / 3,4	
1532HF FA	1532HF KA	32	28,6	30 / 4,6	
1540HF FA	1540HF KA	40	35,8	30 / 6,8	
1550HF FA	1550HF KA	50	45,1	30 / 10,3	
1563HF FA	1563HF KA	63	57	15 / 6,7	
medium mechanical resistance (750 N)					
4016EHF FA		16	13	30 / 3,0	
4020HF FA		20	16,9	30 / 3,4	
4025HF FA		25	21,4	30 / 4,9	
4032HF FA		32	27,4	30 / 6,4	
4040HF FA		40	35,4	30 / 8,6	
4050HF FA		50	44,3	30 / 9,9	
4063HF FA		63	58	15 / 8,7	
high mechanical resistance (1250 N)					
8016EHF FA		16	12,2	30 / 3,7	
8020HF FA		20	15,8	30 / 4,3	
8025HF FA		25	20,6	30 / 5,9	
8032HF FA		32	26,6	30 / 8,0	
8040HF FA		40	34,4	30 / 10,1	
8050HF FA		50	43,2	30 / 14,0	
8063HF FA		63	57	15 / 10,0	

Accessories for rigid halogen-free pipes made in dimension series in compliance with EN and IEC



	pipe	elbows		couplings		clamps		
			pcs. / kg		pcs. / kg		pcs. / kg	
mm								
16	1516EHF FA	4116HF FB	10; 480 / 2,4	55	0216HF FB	10; 1320 / 7,4	5316EHF FB	10; 2700 / 13,2
	1516EHF KA	4116HF KB	10; 200 / 1,0		0216HF KB	10; 1320 / 7,4	5316EHF KB	10; 2700 / 13,2
20	1520HF FA	4120HF FB	10; 270 / 4,5	70	0220HF FB	10; 900 / 6,9	5320HF FB	10; 1800 / 10,6
	1520HF KA	4120HF KB	10; 100 / 1,7		0220HF KB	10; 900 / 6,9	5320HF KB	10; 1800 / 10,6
25	1525HF FA	4125HF FB	10; 140 / 3,8	85	0225HF FB	10; 500 / 6,3	5325HF FB	10; 1200 / 9,8
	1525HF KA	4125HF KB	10; 50 / 1,4		0225HF KB	10; 500 / 6,3	5325HF KB	10; 1200 / 9,8
32	1532HF FA	4132HF FB	10; 60 / 3,7	110	0232HF FB	10; 260 / 5,5	5332HF FB	10; 880 / 9,8
	1532HF KA	4132HF KB	10; 50 / 3,1		0232HF KB	10; 260 / 5,5	5332HF KB	10; 880 / 9,8
40	1540HF FA	4140HF FB	5; 35 / 3,2	135	0240HF FB	10; 120 / 3,8	5340HF FB	10; 560 / 8,2
	1540HF KA	4140HF KB	5; 35 / 3,2		0240HF KB	10; 120 / 3,8	5340HF KB	10; 560 / 8,2
50	1550HF FA				0250HF FB	10; 210 / 8,8	5350HF FB	10; 100 / 1,6
	1550HF KA				0250HF KB	10; 210 / 8,8	5350HF KB	10; 100 / 1,6
63	1563HF FA				0263HF FB	10; 50 / 3,7	5363HF FB	
	1563HF KA				0263HF KB	10; 50 / 3,7	5363HF KB	



Optical cable protectors - HDPE



	750 N / 5 cm						
	HDPE		mm	mm	mm	S - cable harnesses m / kg	B - drums m / kg
	A	06032	32	26 / 27	400	100 / 26	1750 / 755
	-5 - + 50 °C	06040	40	33 / 34 / 35	400	100 / 39	1750 / 974
	-5 - + 50 °C	06050	50	41 / 44	500	100 / 48	1250 / 897
	AB / AS orange						
	FB / FS black						
	LB / LS grey						
	CB / CS blue						
	BB / BS red						
	EB / ES yellow						

Single-coated pipes designed to protect optical cables. The 06040 protector is available with inner surface lubricated with mineral oil as well.

For larger volumes different color versions (beyond presented versions), labeling, number of differential stripes, denticular inner surface or inner diameter size (material thickness) can be ordered based on customer needs and specifications.

Shock resistance: N (normal, ČSN EN 50086-2-4/A1)

Bend resistance: flexible

The minimum bending radius for production and storage is 400 - 500 mm (see the table).

The protectors are made of high-density polyethylen and are classified as C3 flammability class in compliance with ČSN 73 0823 (pg. 113).



HDPE coupling



	HDPE		pipe		
	A		mm		pcs. / kg
	-5 - + 50 °C	05030	32		1 / 0,04
		05040	40		1 / 0,32
		05050	50		1 / 0,2

Protector coupling of optical cables is designed to join the pipes when tracing and guarantees its perfect connection.



HDPE terminal



	HDPE		pipe		
	A		mm		pcs. / kg
	-5 - + 50 °C	05031	32		1 / 0,08
		05041	40		1 / 0,19
		05042	40		1 / 0,22
		05051	50		1 / 0,32

The terminal of optical cable protector is designed to terminate the tracing. The 05042 terminal - with valve.



KOPOFLEX® - flexible doublecoat corrugated pipe

Double-coated pipe designed for mechanical protection of all kinds of power and data wiring. The pipes are made in compliance with ČSN EN 50086-2-4. When ordering a bigger quantity the pieces may be delivered in various colour performance or marking, as a standard they are delivered in red and blue. There is a tightening wire or string in each scroll and the coupling is put on as well. Coverage level: IP 40, with sealing ring IP 67. The outside of the pipe is made of HDPE and the inside is made of LDPE. This combination allows high flexibility even with small bend radius. It is necessary to pay attention, during the mechanical compacting of the layers above the protector, so that the values for the allowed loading of the protector are not exceeded.

	>450 N / 20 cm
	50 m
	external coat - HDPE internal coat - LDPE not self-snuffing
	A
	-45 - + 60 °C (assembly -5 - +60°C)
	pg. 99
	BA - red CA - blue FA - black EA - yellow

	mm	mm	mm	cm	m / kg
KF 09040	40	32	230	80 x 25	50 / 9,5
KF 09050	50	41	350	100 x 30	50 / 13
KF 09063	63	52	350	90 x 46	50 / 15,7
KF 09075	75	61	350	120 x 40	50 / 18,7
KF 09090	90	75	400	125 x 45	50 / 27
KF 09110	110	94	400	120 x 70	50 / 34,5
KF 09120	120	100	500	150 x 60	50 / 37,5
KF 09125	125	108	500	150 x 70	50 / 39
KF 09160	160	136	650	190 x 80	50 / 46
KF 09175	175	150	700	200 x 65	50 / 64



KOPODUR® - rigid doublecoat corrugated pipe

Double-coated pipe designed for mechanical protection of all kinds of power and data wiring. The pipes are made in compliance with ČSN EN 50086-2-4. When ordering a bigger quantity the pieces may be delivered in various colour performance or marking, as a standard they are delivered in red. The pipe is available in form of a bar, the coupling is put on one end of it. The connection is sealed dust/sand resistant. Coverage level: IP 40, with sealing ring IP 67. Both outer and inner coat of the pipe is made of HDPE. This combination provides high strength. It is necessary to pay attention, during the mechanical compacting of the layers above the protector, so that the values for the allowed loading of the protector are not exceeded.

	>450 N / 20 cm
	6 m
	HDPE not self-snuffing
	A
	-45 - + 60 °C (assembly -5 - +60°C)
	pg. 99
	BC - red CC - blue FC - black

	mm	mm	cm	m / kg
KD 09050	50	41	82 x 66 x 600	1170 / 290
KD 09063	63	52	80 x 52 x 600	624 / 215
KD 09075	75	61	104 x 88 x 600	978 / 365
KD 09090	90	75	120 x 76 x 600	648 / 367
KD 09110	110	94	112 x 95 x 600	462 / 325
KD 09120	120	100	112 x 128 x 600	612 / 459
KD 09125	125	108	112 x 71 x 600	288 / 207
KD 09160	160	136	117 x 83 x 600	198 / 240
KD 09175	175	150	108 x 126 x 600	270 / 346
KD 09200	200	175	115 x 76 x 600	120 / 178



KOPOHALF® - divided cable duct

A system of divided cable ducts is suitable mainly for a protection of underground cable laying and for a laying-out of the energy and communication lines. Another possible application is a protection of already installed underground cables. The cable ducts are delivered in dismantled condition. When installing, the cables are put in the bottom part and then the top part is snapped to the bottom one. The divided cable ducts are manufactured and tested in accordance with standard ČSN 50 086-2-4. Connecting of protectors is performed by overlapping joined lower parts with an upper part at length of approximately 30 cm.

	CA - blue BA - red
	3 m
	HDPE halogen-free
	A
	storage, fixing -45 - +75 °C installation +5 - +75°C

	N / cm	mm	mm	cm	m / kg
06110/2	450	110	100	107 x 107 x 300	162 / 375
06160/2	750	160	138	56 x 60 x 300	72 / 360



Couplings - slip-over couplings are the same for both types of pipes and are used to join the pipes.



Sealing rings - the same for both types of pipes and are used to seal the joint to prevent it against humidity and water.

Closing plugs - for blinding of backup lines and for temporary blinding of pipes when installing.

90° elbows - rigid elbows for joining pipes in 90° angle. Per order only.

45° elbows - rigid elbows for joining pipes in 45° angle. Per order only.

Distance spacers - for position fixation of several pipes in one excavation. Distance spacers are for fixation 8 pipes and spacer can be split for fixation 2, 4 and 6 pipes. Per order only.

 pipe mm	coupling	sealing ring	closing plug	elbow			distance spacer
				90°	45°		
40	02040	16040	17040				
50	02050	16050	17050	08050/90	08050/45	350	07050/8
63	02063	16063	17063	08063/90	08063/45	350	07063/8
75	02075	16075	17075	08075/90	08075/45	350	07075/8
90	02090	16090	17090	08090/90	08090/45	400	07090/8
110	02110	16110	17110	08110/90	08110/45	400	07110/8
120	02120	16120	17120	08120/90	08120/45	500	
125	02125	16125	17125	08125/90	08125/45	500	07125/8
160	02160	16160	17160	08160/90	08160/45	650	07160/8
175	02175	16175	17175	08175/90	08175/45	700	
200	02200	16200	17200	08200/90	08200/45	850	07200/8





Ocelové pipe ČSN - high mechanical resistance

The pipes are suitable for mechanical protection of conductors and cables.

There is a coupling on one side of the pipe.

While using pipes along with bushing 4813/P - 4842/P and 4913 - 4942 is scope of application only -5 - +60 °C.

Unvarnished: without surface finish, without corrosion resistance, suitable mostly for construction purposes.

Varnished: ZNM material surface-finished using powder technology, black color RAL 9005, medium corrosion resistance - group 2

ZNM: both side hot-galvanized steel bar, zinc layer 14 - 20 µm, replaces shop primer, medium corrosion resistance - group 2

ZN: after steel bar welding hot-galvanized using immersion, zinc layer 60 - 100 µm, high corrosion resistance - group 4

	1250 N / 5 cm
	EN 61386-44561
	3 m
	steel
	-60 - + 250 °C
	pg. 100 - 102, 109

steel threaded unvarnished	steel threaded varnished	steel threaded ZNM	steel threaded ZN				
				mm	mm		m / kg
ČSN							
6013 N	6013	6013 ZNM	6013 ZN	20,4	18,2	P13,5	1350 / 753
6016 N	6016	6016 ZNM	6016 ZN	22,5	20,3	P16	1200 / 742
6021 N	6021	6021 ZNM	6021 ZN	28,3	25,7	P21	750 / 680
6029 N	6029	6029 ZNM	6029 ZN	37	34,4	P29	600 / 728
6036 N	6036	6036 ZNM	6036 ZN	47	44	P36	300 / 531
6042 N	6042	6042 ZNM	6042 ZN	54	51	P42	300 / 613

Steel pipes EN - high mechanical resistance

The pipes are suitable for mechanical protection of conductors and cables.

There is a coupling on one side of the pipe.

Varnished: smooth steel material is varnished on both sides with black color, medium corrosion resistance - group 2

ZN: after steel bar welding hot-galvanized using immersion, zinc layer 60 - 100 µm, high corrosion resistance - group 4



	unthreaded 1250 N / 5 cm threaded 4000 N / 5 cm
	unthreaded EN 61386-4456 threaded EN 61386-5557
	3 m
	steel
	-45 - + 250 °C
	pg. 100 - 102, 109

steel threaded varnished	steel unthreaded varnished	steel threaded ZN	steel unthreaded ZN						
				mm	mm	mm		threaded	unthreaded
				m / kg					
EN									
6016E	6216E	6016E ZN	6216E ZN	16	12,6	14	M16x1,5	30; 600 / 306	30; 600 / 234
6020	6220	6020 ZN	6220 ZN	20	16,2	18	M20x1,5	30; 600 / 450	30; 600 / 294
6025	6225	6025 ZN	6225 ZN	25	21,2	22,6	M25x1,5	30; 600 / 600	30; 600 / 444
6032	6232	6032 ZN	6232 ZN	32	28,2	29,6	M32x1,5	21; 420 / 532	21; 420 / 403
6040	6240	6040 ZN	6240 ZN	40	36,2	37,6	M40x1,5	15; 150 / 247	15; 150 / 182
6050	6250	6050 ZN	6250 ZN	50	46,2	47,6	M50x1,5	15; 150 / 302	15; 150 / 228
6063	6263	6063 ZN	6263 ZN	63	58,8	60,6	M63x1,5	15; 150 / 424	15; 150 / 288



Extending couplers for steel pipes

Al-alloy

	mm	mm		pcs. / kg
9813	24 x 30	19,3	P13,5	20 / 0,26
9816	26,5 x 35	21,7	P16	20 / 0,35
9829	41,5 x 50	35,7	P29	20 / 0,75

The couplings are designed for connection of flexible metal pipes of 33.. series (page 93) with steel threaded pipes.

It is fitted with inner PG thread on one side and a clipping nick to fix the flexible metal pipe on the other side.



Elbows for ČSN steel pipes - high mechanical resistance

Fitted with coupler on one side.

Varnished: ZNM surface-finished material using powder technology, black color RAL 9005, medium corrosion resistance - group 2

ZNM: both side hot-galvanized steel bar, zinc layer 14 - 20 µm, replaces shop primer, medium corrosion resistance - group 2

ZN: after steel bar welding hot-galvanized using immersion, zinc layer 60 - 100 µm, high corrosion resistance - group 4

	1250 N / 5 cm
	EN 61386-44561 TP-KO-02/98
	steel
	-60 - + 250 °C

steel threaded varnished	steel threaded ZNM	steel threaded ZN	pipe mm	mm	mm	pcs. / kg
6113	6113 ZNM	6113 ZN	20,4	P13,5	80	1000 / 173,8
6116	6116 ZNM	6116 ZN	22,5	P16	100	800 / 182,8
6121	6121 ZNM	6121 ZN	28,3	P21	120	400 / 159,4
6129	6129 ZNM	6129 ZN	37	P29	155	250 / 172,5
6136	6136 ZNM	6136 ZN	47	P36	185	100 / 120,2
6142	6142 ZNM	6142 ZN	54	P42	200	50 / 97,6

Elbows for EN steel pipes - high mechanical resistance



Fitted with coupler on one side.

Varnished: smooth steel material is varnished on both sides with black color, medium corrosion resistance - group 2

ZN: after steel bar welding hot-galvanized using immersion, zinc layer 60 - 100 µm, high corrosion resistance - group 4

	unthreaded 1250 N / 5 cm threaded 4000 N / 5 cm
	unthreaded EN 61386-4456 threaded EN 61386-5557
	steel
	-45 - + 250 °C

steel threaded varnished	steel unthreaded varnished	steel threaded ZN	steel unthreaded ZN	pipe mm	mm	mm	pcs. / kg
6116E	6316E	6116E ZN	6316E ZN	16	M16x1,5	55	15 / 3,1
6120	6320	6120 ZN	6320 ZN	20	M20x1,5	70	25 / 6,7
6125	6325	6125 ZN	6325 ZN	25	M25x1,5	115	25 / 8,7
6132	6332	6132 ZN	6332 ZN	32	M32x1,5	125	20 / 9,8
6140	6340	6140 ZN	6340 ZN	40	M40x1,5	140	15 / 8,2
6150	6350	6150 ZN	6350 ZN	50	M50x1,5	170	5 / 3,4
6163	6363	6163 ZN	6363 ZN	63	M63x1,5	210	3 / 2,3



Couplers for steel threaded pipes

EN - steel
ČSN - Al-alloy

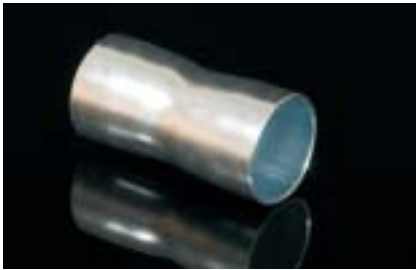


Couplers are designed to join steel pipes and elbows or to protect conductors and cables mechanically.

ČSN couplers are made of Al-alloy.

EN couplers are made of steel with varnish or Zn surface finish.

varnished	Zn	mm	mm	pcs. / kg
EN				
316E/1	316E/1 ZN		M16x1,5	25 / 1,2
320/1	320/1 ZN		M20x 1,5	50 / 2,5
325/1	325/1 ZN		M25x1,5	50 / 3
332/1	332/1 ZN		M32x1,5	50 / 3,5
340/1	340/1 ZN		M40x1,5	25 / 2
350/1	350/1 ZN		M50x1,5	10 / 1
363/1	363/1 ZN		M63x1,5	5 / 0,6
ČSN				
313/1		24,0 x 30	P13,5	10; 540 / 6,3
316/1		26,5 x 35	P16	10; 350 / 6
321/1		32,0 x 40	P21	10; 240 / 5,2
329/1		41,5 x 45	P29	10; 120 / 5,6
336/1		51,5 x 55	P36	10; 60 / 3,9
342/1		58,5 x 60	P42	10; 100 / 7,8



Slip-on couplers for steel pipes



steel		mm	min mm	pcs. / kg
varnished	Zn			
EN				
316E/2	316E/2 ZN		16	25 / 1,2
320/2	320/2 ZN		20	50 / 2,5
325/2	325/2 ZN		25	50 / 3
332/2	332/2 ZN		32	50 / 3,5
340/2	340/2 ZN		40	25 / 2
350/2	350/2 ZN		50	10 / 1
363/2	363/2 ZN		63	5 / 0,6
ČSN				
313/2		22,6	20,4	20 / 0,7
316/2		24,7	22,5	20 / 0,9
321/2		30,9	28,3	20 / 1,2
329/2		39,6	37	20 / 1,4
336/2		50	47	10 / 1,1
342/2		57	54	10 / 1,3

The couplers are designed to join steel pipes and elbows or to protect conductors and cables mechanically. They are fitted with throats on both ends and are designed to join unthreaded armature pipes. The couplers are made of hoops by welding. ČSN couplers are made with ZnCr surface finish. EN couplers are made with varnish or Zn surface finish.



Straight bushing for steel pipes - outer



	PE self-snuffing
	A - C2
	-5 - + 60 °C

	pipe mm	mm	input mm	pcs. / kg
EN				
4816E	16	21	9	50 / 0,15
4820	20	21	13	50 / 0,2
4825	25	22	18	400 / 2,4
4832	32	27	25	250 / 2,5
4840	40	27	33	100 / 1,2
4850	50	27	43	50 / 0,8
4863	63	36	55	20 / 0,6
ČSN				
4813/P	20,4	14	15	500; 3000 / 9
4816/P	22,5	16	17	600; 1200 / 8,5
4821/P	28,3	21	22	500; 1000 / 6,5
4829/P	37	27	30	250; 500 / 6,3
4836/P	47	27	38	150; 300 / 4,9
4842/P	54	27	44	75; 150 / 4

The bushings are designed to mechanically protect the conductors or cables coming from the steel pipe. Plug the bushing from outside on the end of pipe before installing cables. Date of delivery for EN bushing: approx. 4 weeks.



Straight bushing for steel pipes ČSN - inner



	PE self-snuffing
	A - C2
	-5 - + 60 °C

	pipe mm	mm	input mm	pcs. / kg
4913	18,2	22	13	1 / 0,003
4916	20,3	22	16	1 / 0,0035
4921	25,7	22	21	1 / 0,0045
4929	34,4	22	30	1 / 0,006
4936	44	22	39	1 / 0,0077
4942	51	22	46	1 / 0,0091

The bushings are designed to mechanically protect the conductors or cables coming from the the steel pipe. Plug the bushing from inside on the end of pipe before installing cables.



WEICON 375

Corrosion protection for galvanized surfaces. To eliminate defective and damaged places on galvanized surface.



Aluminium pipes

- high mechanical resistance



	1250 N / 5 cm
	EN 61386-2-1
	3 m
	Al Mg Si 0,5-F 22

unthreaded			
	mm	mm	m / kg
EN			
6216E AL	16	12,6	30; 600 / 58
6220 AL	20	16,2	30; 600 / 77
6225 AL	25	21,2	30; 600 / 98
6232 AL	32	28,2	30; 300 / 73
6240 AL	40	36,2	15; 150 / 51
6250 AL	50	46,2	15; 150 / 65
6263 AL	63	58,8	15; 150 / 106

The pipes are proper for mechanical protection of conductors and cables. They can be used for industrial installations, high anticorrosive ability – class 4.
Per order only.



Elbows for aluminium pipes

- high mechanical resistance



	1250 N / 5 cm
	EN 61386-2-1
	Al Mg Si 0.5-F 22

unthreaded		
	pipe mm	pcs. / kg
EN		
6316E AL	16	10 / 0,24
6320 AL	20	10 / 0,44
6325 AL	25	10 / 0,68
6332 AL	32	10 / 1,48
6340 AL	40	5 / 0,76
6350 AL	50	5 / 1,36
6363 AL	63	5 / 1,81

Per order only.



Slip-on couplers for aluminium pipes



	Al Mg Si 0.5-F 22
--	-------------------

	pipe mm	pcs. / kg
EN		
316E/2 AL	16	50 / 0,2
320/2 AL	20	50 / 0,3
325/2 AL	25	50 / 0,7
332/2 AL	32	50 / 1,2
340/2 AL	40	25 / 0,7
350/2 AL	50	25 / 1,2
363/2 AL	63	25 / 1,7

Per order only.



Clips OMEGA



	Al
--	----

	pipe mm	pcs. / kg
EN		
5216 E AL	16	250 / 3,5
5220 AL	20	250 / 3,8
5225 AL	25	250 / 4,6
5232 AL	32	125 / 2,7
5240 AL	40	100 / 2,4
5250 AL	50	100 / 2,8
5263 AL	63	100 / 3,2

In order to facilitate the assembly the clip is fitted with a groove for insertion, during the assembly it is not necessary to entirely separate the upper part of the clip.
Per order only.

Wiring pipes - number of cables to put in

		CYKY 2 x 1,5	CYKY 3 x 1,5	CYKY 4 x 1,5	CYKY 3 x 2,5	CYKY 5 x 1,5	CYKY 4 x 2,5	CYKY 5 x 2,5	CYKY 4 x 4	CYKY 5 x 4	CYKY 4 x 6	CYKY 5 x 6
cable diameter (mm)	6	8,3	8,7	9,5	10	10,3	10,9	12,3	13,2	14,4	14,4	16
FLEXIBLE PIPES												
XX16E - EN	1	1	1	X	X	X	X	X	X	X	X	X
XX20 - EN	2 (3)	1	1	1	1	1	1	X	X	X	X	X
XX25 - EN	4	2	2	1	1	1	1	1	1	1	1	X
XX32 - EN	8	4	4	3	3	3	2	1	1	1	1	1
XX40 - EN	13	7	6	5	5	4	4	3	3	2	2	1
XX50 - EN	21	11	10	8	7	7	6	5	4	4	4	3
XX13 - ČSN	2	1	1	1	1	1	1	X	X	X	X	X
XX16 - ČSN	3	1 (2)	1	1	1	1	1	1	1	X	X	X
XX23 - ČSN	7	4	3	3	2	2	1 (2)	1	1	1	1	1
XX29 - ČSN	11	6	5	4	4	4	3	3	2	1	1	1
XX36 - ČSN	17	9	8	7	6	6	5	4	3	3	3	2
SF16	3	1	1	1	1	1	1	1	1	X	X	X
SF20	5	3	2	1 (2)	1	1	1	1	1	1	1	1
SF25	8	4	4	3	3	3	2 (3)	1 (2)	1	1	1	1
SF32	13	7	6	5	5	5	4	3	3	2 (3)	2 (3)	1 (2)
KF 09040	13	7	6	5	5	5	4	3	3	2	2	2
KF 09050	22	11	10	9	8	7	7	5	5	4	4	3
KF 09063	35	18	17	14	13	12	11	8	7	6	6	5
KF 09075	49	25	23	19	18	17	15	12	10	8	8	7
KF 09090	74	38	35	29	27	25	22	18	15	13	13	10
KF 09110	116	60	55	46	42	39	35	28	24	20	20	16
KF 09120	131	68	62	52	47	44	40	31	27	23	23	18
KF 09125	153	80	73	61	55	52	46	36	32	27	27	21
KF 09160	242	127	115	97	87	82	73	58	50	42	42	34
KF 09175	295	154	140	117	106	100	89	70	61	51	51	41
RIGID PIPES												
XX16E - EN	1 (2)	1	1	1	1	1	X	X	X	X	X	X
XX20 - EN	2 (3)	1	1	1	1	1	1	1	1	X	X	X
XX25 - EN	6	3	3	2	1 (2)	1 (2)	1	1	1	1	1	1
XX32 - EN	9	5	4	4	3	3	23	2	1	1	1	1
XX40 - EN	15	8	7	6	6	5	5	4	3	3	3	1 (2)
XX50 - EN	24	13	12	10	9	8	7	6	5	4	4	3
XX63 - EN	43	22	20	17	15	14	13	10	9	7	7	6
6013 - ČSN	4	2	1 (2)	1	1	1	1	1	1	1	1	X
6016 - ČSN	2 (3)	3	3	1 (2)	1	1	1	1	1	1	1	1
6021 - ČSN	9	5	4	3	3	3	3	1 (2)	1	1	1	1
6029 - ČSN	15	8	7	6	6	5	5	4	3	3	3	2
6036 - ČSN	25	13	12	10	9	9	8	6	5	4	4	4
6042 - ČSN	34	18	16	14	12	12	10	8	7	6	6	5
6016E - EN	3	1	1	1	1	1	1	1	X	X	X	X
6020 - EN	4	2	1 (2)	1	1	1	1	1	1	1	1	X
6025 - EN	7	3	3	3	2	2	1	1	1	1	1	1
6032 - EN	11	6	5	5	4	4	3	3	2	1	1	1
6040 - EN	19	10	9	7	7	6	6	4	4	3	3	3
6050 - EN	30	15	14	12	11	10	9	7	6	5	5	4
6063 - EN	48	25	23	19	17	16	15	11	10	8	8	7
KD 09040	13	7	6	5	5	5	4	3	3	2	2	2
KD 09050	22	11	10	9	8	7	7	5	5	4	4	3
KD 09063	35	18	17	14	13	12	11	8	7	6	6	5
KD 09075	49	25	23	19	18	17	15	12	10	8	8	7
KD 09090	74	38	35	29	27	25	22	18	15	13	13	10
KD 09110	116	60	55	46	42	39	35	28	24	20	20	16
KD 09120	131	68	62	52	47	44	40	31	27	23	23	18
KD 09125	153	80	73	61	55	52	46	36	32	27	27	21
KD 09160	242	127	115	97	87	82	73	58	50	42	42	34
KD 09175	295	154	140	117	106	100	89	70	61	51	51	41
KD 09200	401	209	191	160	144	136	121	95	83	70	70	56

The table is based on 60% cross-section usage of the pipes.